NURSE PRACTITIONER USE OF PATIENT-CENTERED CARE TO IMPROVE THE QUALITY OF LIFE OF WOMEN EXPERIENCING VASOMOTOR SYMPTOMS OF MENOPAUSE

By

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Abstract

Menopause is a passage in every woman's life. Hormonal changes are responsible for the cessation of ovulation, and this transition can be difficult for some women. Vasomotor symptoms (VMS), consisting of hot flashes/flushes and night sweats, can be bothersome for some, and VMS are the primary reason for women to seek medical attention during menopause. Patient-centered care (PCC) is an approach which improves discussion, promotes patient involvement, and creates a positive provider/patient relationship with a result of improved quality of life (QOL). Hormone therapy, the gold standard for VMS relief, has come under scrutiny in recent years due to a fear of increased health risks with its use. Complementary and alternative medicines are being promoted as natural alternatives. Women are seeking help to make sense of the variety of treatment options available for VMS relief and nurse practitioners are in an optimal position to help these women. Through the use of PCC, nurse practitioners (NP) can conduct a thorough health history and assessment. They can provide expert advice, hold discussions with women about their preferences and assess them for individual risks with the ultimate provision of appropriate and individualized care for women experiencing VMS of menopause.

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CHAPTER 1

Introduction

Menopause is a transition in every woman's life. It occurs due to the loss of ovarian follicular action that results in amenorrhea where no other pathologic or physiologic cause is implicated (Rowe, Blake & Belisle, 2006; Weismiller, 2009). During the transition to menopause, and during menopause itself, the body's production of reproductive hormones and especially estrogen is reduced. It is the deficiency of estrogen that is implicated in the incidence of vasomotor symptoms (VMS) such as hot flashes and night sweats (Weismiller, 2009). Menopause is not a disease; it is a reproductive transition that will occur in every woman. Menopause may significantly affect the quality of life (QOL) of women and this is evident in that VMS are one of the primary reasons why women in the perimenopause and menopausal transition seek medical attention (Col, Guthrie, Politi & Dennerstein, 2009; Godfrey & Low Dog, 2008; Lewis, 2009; Reid, Blake, Abramson, Khan, Senikas & Fortier, 2009). There can be significant individual loss associated with VMS such as sleep disturbances and a reduced sense of well-being but for most women the symptoms can be effectively managed in collaboration with the woman and her health care provider.

The purpose of this paper is to review current literature in order to answer the following question: Can nurse practitioners utilize a patient-centered care approach to help improve the quality of life (QOL) of women experiencing VMS? The background of menopause and vasomotor symptoms will be reviewed along with information regarding a population of women in the perimenopause and menopausal period. The concept of patient-centred care (PCC) as implemented by the nurse practitioner (NP) will be

introduced as an approach to care that facilitates improved patient satisfaction and ultimately QOL for women experiencing VMS. A discussion of how shared decision-making is important to women during a patient-centered health visit and how NPs can adopt these preferences will be discussed. Evidence-based information related to lifestyle and therapies for the management of VMS will be discussed. Finally implications and recommendations for NP practice will be made which will assist NPs in providing individualized symptom management and care for women experiencing VMS of menopause.

Background and Need

Population

The population referred to in this paper is Caucasian peri-menopausal and menopausal women of the province of British Columbia (BC), Canada. Most women begin the transition to menopause at approximately age 47, typically with changes in length and frequency of menstrual cycles (Weismiller, 2009). In Canada, natural menopause is defined as 12 months of amenorrhea which occurs at an average age of 51.2 years (Rowe et al., 2006). An age range of between 45 to 54 years has been chosen to reflect the perimenopausal period which lasts approximately ten years including the first 12 months of compete amenorrhea and on into the menopause period (Canderelli, Leccesse, & Miller, 2007). In BC, 16.2% of the population are women between 45 and 54 years of age with 85% of that population being Caucasian which equates to 13.7% of the population in BC being Caucasian women in the menopause transition (BC Stats, 2006). There may be over 289,000 Caucasian women in BC who will be entering or are in the midst of menopause transition. Caucasian women were chosen as a reference because comparable studies in non-caucasian women are lacking (Cheung, Chaudhry, Kapral,

Jackevicius & Robinson, 2004) however; this paper will demonstrate that the use of PCC, which focuses on individualized care, is applicable to all women.

Need

The symptoms of menopause vary for women. Menstrual irregularity is common in the peri-menopausal period. The amount and duration of menstrual flow changes and some women may experience missed or prolonged cycles (Weismiller, 2009). During the passage toward, and in the first few years following menopause, women may experience VMS such as hot flashes and night sweats. For most women, VMS are unpleasant, but for some, VMS can be quite bothersome. In this paper the term bothersome is meant to represent VMS for which women seek medical care. Studies have shown that 50% to 88% of women in developed countries seek health care for distress related to symptoms of menopause (Hyde, Nee, Drennan, Butler & Howlett, 2010; Godfrey & Low Dog, 2008; Lukes, 2008; Stubbs, Cohen & Carr, 2008). Approximately 15% to 30% of perimenopausal and menopausal women will consult health care providers for symptom relief from VMS (Politi, Schleinitz & Col, 2008). A Canadian review by Bachmann (2005) found this number to be higher reporting 40% to 60% of Caucasian women experiencing moderate to severe hot flashes, with 10% to 20% of that 60% finding VMS almost intolerable.

Menopause

There is no chronological age at which women enter or leave certain periods of the menopause transition (Soules, Sherman, Parrott, Rebar, Santoro, Utian et al., 2001). The age for the initiation of menopause has been suggested to be approximately 40 years with a complete loss of production of estrogen occurring around age 55 (Cobin, 2006). Perimenopause begins when the levels of estrogen and progesterone begin to fall and it

lasts approximately 10 years (Canderelli et al., 2007). Menopause and the transition towards it are frequently described and defined differently in literature, but for the purposes of this paper, the peri-menopausal time period is defined as the period leading up to and including the first 12 months after cessation of menses. Women then enter into menopause which is defined as 12 months after complete cessation of menses (Canderelli et al., 2007; Rowe et al., 2002). Menopause is a complex physiological event with many physical manifestations including VMS. A decline in estrogen is prevalent in this process; therefore a brief overview of the role that estrogen plays in this transition will be discussed.

Estrogen

Estrogens are derived from cholesterol in a complex mechanism of hormone synthesis. Estrogen is a broad term that encompasses the three hormones estradiol, estrone, and estriol (Deneris & Huether, 2006). Estradiol is the most potent and plentiful of the estrogens and is mainly secreted by the granulosa cells of follicles in the ovaries with a small amount originating in the adrenal cortex. Androgens are male hormones found in low levels in females, and they are converted to estrone in ovarian and peripheral adipose tissues. Estriol is a metabolite of estrone and estradiol. Pulsitile secretions of gonadotropin-releasing hormone (GnRH) occur, which in turn stimulates the secretion of leuteinizing hormone (LH) and follicle-stimulating hormone (FSH) from the anterior pituitary; thus, GnRH drives the ovarian production of estradiol. As women age, the number of ovarian follicles decline with the consequent loss of granulosa cell function (Burger, Dudley, Mamers, Robertson, Groome et al., 2002). The occurrence of hot flashes coincides with a decrease in estradiol secretion. Estrogen deficiency is also thought to place women at increased risk for vaginal atrophy, cardiovascular

complications and osteoporosis. Although these other symptoms exist, it is beyond the scope of this paper to discuss them all. The Society of Obstetricians and Gynaecologists of Canada (SOGC) recognize that menopause and its symptoms include more than just VMS and assert that women seek medical care for these other symptoms as well (Reid, et al., 2009); however, this paper will focus only on VMS.

Vasomotor symptoms

A vasomotor symptom is a term meant to represent hot flashes and night sweats. The terms hot flash and hot flush are often used interchangeably in the literature and for the purpose of this paper the term hot flash will be used. A hot flash is the sudden onset of a sensation of heat, accompanied by sweating and flushing that occurs in the face and spreads to the head, neck and chest lasting one to five minutes (Stubbs et al., 2008). The etiology of the hot flash is unknown, but lability is thought to occur in the thermoregulatory center of the hypothalamus in relation to falling estrogen and progesterone levels (MacLennan, Broadbent, Lester & Moore, 2004). A narrowing of the thermoregulatory zone occurs so that small changes in temperature can stimulate sweating or shivering (MacLennan et al., 2004). Estrogen effects are thought to be partly mediated through the serotonergic system (Weismiller, 2009). It has been hypothesized that serotonin and norepinephrine, two neurotransmitters in the brain, also decline affecting the thermoregulatory center of the hypothalamus (Nelson, Vesco, Haney, Fu, Nedrow, Miller et al., 2006; Pinkerton, Stovall & Kightlinger, 2010). The decline in these neurotransmitters in the hypothalamus increases a release of serotonin and norepinephrine which in turn lowers the thermoregulatory level leading to inappropriate heat loss mechanisms such as hot flashes (Nelson et al., 2006; Weismiller, 2009). VMS are symptoms that can cause great concern for women and may interfere with their QOL.

Quality of life

When women are faced with bothersome hot flashes and night sweats, there can be a negative impact their QOL. Quality of life can be defined as an individual's belief about functioning and achievement (Utian, 2005). Most women manage to successfully navigate through their reproductive lives without revealing overt symptoms of menstruation; however, during the transition into menopause they often lose control over the ability to conceal menopausal effects (Morris & Symonds, 2004). Some women are not bothered by these symptoms while others are greatly disturbed by flushing, sweating, palpitations, and anxiety (Reid et al., 2009). Perimenopausal and menopausal VMS will vary and fluctuate differently among individual women. Hot flashes and night sweats can lead to sleep disturbances, insomnia and /or irritability. When these symptoms are combined with potentially embarrassing physical signs of flushing and perspiration, a woman's QOL may be negatively affected.

Assessment of QOL must take into consideration somatic symptoms such as hot flashes and night sweats, psychological symptoms such as mood swings or anxiety and life circumstances such as social impairment. For example VMS that occur during sleeping hours can disrupt sleep resulting in insomnia or fatigue and psychological symptoms such as mood swings and irritability. These influence and affect women's general well-being when examining the need for VMS management (Bachmann, 2005; Utian, 2005). Flush-related activity does contribute to the reduction of QOL and is exemplified by the woman peeling off layers of clothing as she looks for a window to open. This has the potential to lead to a feeling of embarrassment if this visible show of a hot flash occurs at inopportune moments such as during a business meeting or at a social

event. VMS contribute to noticeable signs of aging and can reduce women's self-image. Decreased QOL was positively correlated with moderate to severe hot flashes compared to women without hot flashes (Bachmann, 2005; Utian, 2005). Therefore the need to manage VMS of menopause is established through negative individual consequences and those to society as well. VMS may have detrimental societal effects particularly if a woman's sleep and mood are impaired. Their ability to function, for example in their occupation or social life, may be negatively affected (Bachmann, 2005). Utian (2005) finds that it is difficult to quantify QOL since there are many factors that contribute to overall QOL. It is therefore asserted that a positive improvement of QOL related to VMS would include patient satisfaction with the health care encounter and management plan that increases adherence to mutually agreed upon treatment options. NPs utilizing patient-centered care in the health encounter will improve women's QOL by assisting them to manage their bothersome VMS.

Patient-centered care

To be patient-centered is to find out what patients want in regard to their pursuit of health care. PCC is defined differently based on where and how it is being used, for example, from a policy perspective, it is a measure of healthcare quality and a means for tailoring treatment to meet patient needs, improve patient-provider communication and set patient goals based on patient preference (Robinson, Callister, Berry & Dearing, 2008). A patient-centered approach can also emphasize the positive perspective of patients' well-being and involvement in care (Guimond, Bunn, O'Connor, Jacobsen, Tait, Drake, et al, 2003). For the purpose of this paper, PCC will be defined as taking into account the patient's desire for information and for shared decision-making and the practitioner responding appropriately (Stewart, 2001). The reason for use of a patient-

centered framework is to improve patient satisfaction and for the practitioner to provide appropriate, safe and effective care that is based upon the patients' needs and goals. Understanding the patients' goals encourages shared decision-making between patient and provider which assists in identifying barriers and offering solutions that incorporates the patient perspective (Robinson et al., 2008). It does not exclude the promotion of evidence-based practice by the provider but patient centeredness seeks to find the best individualized care for the patient (Robinson et al., 2008).

Health care providers – Nurse Practitioners

Women present with concerns to the health care providers when they are seeking information and a management plan for resolution of a problem. In the province of BC, there are various health care providers including NPs. In BC, the first point of access traditionally was the general practitioner and in response to reduced access to health care, "NPs have been incorporated within the primary health care team to enhance the provision of timely, accessible, cost-effective, and quality health care for all Canadians" (CNA, 2006, p. 3). In BC, NPs are prepared to work independently in primary care settings such as clinics or community health care centers as well as where primary health care services might be available such as a non-urgent area of an emergency department (CRNBC, 2010a). A NP is not a physician substitute. Instead they are independent practitioners that bring a unique approach to providing health care (Weiland, 2008). NPs in BC are registered nurses who have achieved graduate level education as well as advanced training and have met the requirements of NP registration (CRNBC, 2010a). Nurse practitioners in BC practice in accordance with the College of Register Nurses of British Columbia's (CRNBC) standards of practice developed to distinguish specific aspects of NP practice. The CRNBC provides a scope of practice document that sets

standards, limits and conditions for NPs. The document is meant to be an evolving practice document whereby specialty practice is achievable after a negotiated preceptorship until the NP is deemed to meet competencies to work independently (CRNBC, 2010a).

In BC, there are three streams of NP education which include family, pediatric or adult, and for discussion purposes the NP referred to in this paper will be the family NP. Along with a focus on holistic nursing, NPs possess competencies of strong knowledge and skills related to assessing, diagnosing, and treating acute and chronic illnesses as well as focusing on health promotion, treatment and management of health conditions (CNA, 2008). A competency is integrated knowledge, skills, judgment and personal attributes required of nurses to practice safely and ethically in a designated role and setting (CNA, 2008). In BC, the competencies are organized in a conceptual framework of four categories: 1) professional role, responsibility and accountability, 2) health assessment and diagnosis, 3) therapeutic management and, 4) health promotion and prevention of illness and injury (CRNBC, 2010b). The competencies in each category build on competencies already present in the registered nurse such as advanced health assessment and diagnosis, and they address the unique practice role of the NP (CRNBC, 2010b). Training in advanced health assessment is thought to be integral to practice and forms a solid foundation upon which all other competencies are built (Kelley, Kopac & Rosselli, 2006). The advanced graduate education that NPs undertake provides them with additional knowledge and skills that assists NPs in understanding and utilizing the substantial amount of information surrounding menopause, its symptoms and the various treatment modalities (Mosconi, Donati, Colombo, Mele, Liberati, et al., 2009; Todd Pace, 2006).

Studies have shown that women prefer to obtain information from their health care provider rather than attempting to read through the vast amount of information available to them (Armitage, Suter, Verhoef, Bockmuehl & Bobey, 2007). The standards and competencies of the NP role place NPs in an optimal position to assist in the management of VMS when women experiencing them are faced with a reduced QOL. The NP is able to meet the treatment needs of peri- and menopausal women by critically discussing the various treatment options from prescription to over the counter medications available for treatment of VMS.

Treatment Options

Due to the results of recent studies and the variety of touted options for treating VMS, it has become more difficult for women and providers alike to select appropriate treatments. A landmark study on HT was conducted in the late 1990's and early 2000. The Women's Health Initiative (WHI) study was divided into three arms of investigation to study specific interventions and their effects on women's health (Furniss, 2002). HT was one intervention in the study. The results of the WHI study has influenced treatment management of women in the perimenopause and menopause transition and has led to an under treatment of women for menopausal symptoms that has left a substantial population of women suffering from VMS as well as other symptoms of menopause (Lewis, 2009). This section will discuss some of the available types of treatment that are effective for the relief of VMS and will more specifically include implementing lifestyle changes, commencing HT, complementary alternative medicines (CAM) or non-hormonal therapies. It has also been established that women seek help from their health care provider for management of VMS. It has also been discovered that the hot flash may

be a result of a change in the thermoregulatory system, so it would be appropriate to start the discussion with lifestyle choices before progressing into medication options.

Lifestyle.

Lifestyle changes should be considered when it comes to management of VMS associated with perimenopause and menopause. Reid et al. (2009) examined modifiable risk factors, such as smoking, abdominal obesity, diabetes, hypertension, and psychosocial stress and found that by focusing on health promotion and disease prevention women were encouraged to make necessary changes for a healthy lifestyle. Lifestyle changes that encourage weight management, exercise, smoking cessation, and taking steps to reduce the body core temperature have all been effective in assisting with the management of mild VMS (Reid et al., 2009). Although there are no randomized controlled trials (RCTs) to support this suggestion, promotion of a healthy lifestyle has advantages for overall health that extends well beyond VMS relief (Reid et al., 2009). Women and health care providers can look holistically at improvements to health rather than relying solely on pharmaceutical treatments; however, in regards to VMS, lifestyle changes reduce only mild symptoms. As has been stated earlier in this paper, women are seeking health care for bothersome VMS, so pharmacological and non-pharmacological therapies may play a role in the treatment of VMS.

Hormone therapy.

Over the past 20 to 30 years, fluctuating expert and public opinion has been expressed about the efficacy and safety of HT (Huston, et al., 2009). In the 1990s, a notion existed that a regime of post-menopausal hormone replacement of estrogen, with the addition of progesterone for women who retained their uteruses, would reduce the risk of heart disease (Todd Pace, 2006). At the time, the discourse in health literature

shifted from HT for menopause symptom relief toward HT for prevention of chronic diseases (Sveinsdottir & Olafsson, 2006). Two trials, the Heart and Estrogen/Progestin Replacement Study (HERS), and the WHI study were conducted in the 1990s to establish the effects of HT on the primary prevention of heart disease (Furniss, 2002; Rolnick, Jackson, Kopher & Defor, 2007; Todd Pace, 2006). The primary objective of the HERS study was to determine whether or not hormone replacement decreased cardiovascular disease in post-menopausal women with known cardiac disease or breast cancer (Todd Pace, 2006). The results indicated that HT did not provide cardio protection and that it should not be used for this purpose.

The WHI study, designed as a prevention study for women without cardiac disease, found unexpected results. The estrogen/progestin (EPT) arm of the study was stopped early due to the increased incidence of breast cancer in study participants. The estrogen (ET) arm of the study was also stopped early due to the increased incidence of stroke (Canderelli et al., 2007; Nelson, 2004). The women enrolled in the WHI trial were already menopausal with an average age of 63 years, and HT was used as a trial to assess cardio protection and not for VMS relief (Furniss, 2002; Nelson, 2004). It should also be noted that the strength of therapy used was 0.625mg of conjugated equine estrogen (CEE) alone or with 2.5 mg medroxyprogesterone acetate (MPA) (AACE, 2006). The WHI study therefore shed new light on the use of HT. Now, estrogen safety warnings must be placed on all HT product labels and HT is only indicated for the treatment of VMS (Nelson, 2004). These recent studies highlight the need for practitioners to remain current in examining new literature.

It was discussed earlier that risks of HT scared women and providers alike and prescriptions for HT fell as a result. Results of the WHI trial revealed an increased risk of

breast cancer in women who used HT; however, the women enrolled in the study were on average 12 years post menopausal (Langer, 2009). The findings of the trial are not necessarily generalizable to a younger population, but fears of adverse effects remain (Dehn, 2007). Breast cancer is a major concern for women and the evidence suggests that increased rates are positively correlated with the duration of time a woman uses HT (Langer, 2009). The metabolic changes that occur as a result of taking HT may influence the incidence of venous thromboembolism (VTE) (Stevenson, 2009). Estrogen affects coagulation and fibrinolysis and there is a complex hemostasis effect. Simply stated, oral estrogen appears to increase coagulation activation resulting in VTE. In addition to the acquired risk of VTE when taking HT, 3% to 8% of the Caucasian population in the world carry a Leiden factor V gene mutation that contributes to hypercoagulation which results in the development of VTE (Dee Park, Lookinland, Beckstrand & Chasson, 2003). In the literature review conducted by Dee Park et al. (2003), it was found that women who were carriers of the Leiden factor V gene mutation and taking HT were between 14 to 16 times more likely to develop VTE compared to women without the Leiden factor V gene mutation. Women fear the adverse reactions to HT, which has created a ripe situation for the use of alternatives.

Complementary and alternative medicine.

Since the results of the WHI trial and increased fear of adverse effects of HT, there has been a greater push to identify alternatives to HT for the treatment of VMS (Todd Pace, 2006; Wong, Dom, Luo, & Wong, 2009). Complementary and alternative medicines (CAMs) include various herbal products such as black cohosh or phytoestrogens. These particular CAMs were examined as they are the most thoroughly studied herbs for VMS treatment (Borrelli & Ernst, 2008; Hickey, Davis & Sturdee,

2005), and due to the limits of this paper, only these two supplements will be discussed. In 2004, the Canadian government passed legislation placing natural herbal products into a special drug category (Reid et al., 2009). Health Canada also introduced the Natural Health Products Regulation that requires products to be licensed before being sold in Canada (Armitage et al., 2007). Once safety and effectiveness has been assessed and approved by Health Canada, a product licence is issued (Health Canada, 2010). Reid et al. (2009) felt that little had been achieved in the actual regulation of natural herbal products sold in Canada. However, a web search of Health Canada's natural health products site revealed licensed products sold in Canada and this includes all licensed herbal supplements (Health Canada, 2010). Therefore in Canada herbal supplements that have been proven to be safe and effective are licensed for use.

Phytoestrogens are the most common herbal alternative to HT (Lethaby, 2009). They are derived from plant compounds found in many fruits, vegetables, and grains. Phytoestrogens resemble estradiol and have weak estrogenic activity. Soy is one of the most estrogenically potent and extensively studied classes of phytoestrogens (Jacobs, Wegewitz, Sommerfeld, Grossklaus, & Lampen, 2009). A substance, equol, is produced by the intestinal flora and it is believed that it enhances the effect of the phytoestrogens. Only 30% to 50% of women are assumed to be equol producers, thus the phytoestrogens are not equally effective in all women for the treatment of VMS. In the study by Jacobs et al. (2009), the authors concluded that additional research is needed to establish whether or not the action of phytoestrogens are actually influenced by equol.

Another plant, black cohosh (*Cimicifuga racemosa*), has been studied extensively (Borrelli & Ernest, 2008). Extracts of the plant's rhizome have been traditionally used for a variety of female complaints such as dysmenorrhea and is thought to be mildly

estrogenic (Borrelli & Ernst, 2008). Other authors however, argue that the mechanism of action is not estrogenic, but rather it has serotonergic activity (Geller, Shulman, van Breemen, Banuvar, Zhou, Epstein et al., 2009). Serotonergic activity is complex, but an increase in activity would be effective in ameliorating symptoms of depression and anxiety as well as hot flashes (Hirsch & Birnbaum, 2010; Nelson et al., 2006). It is therefore postulated that replacement of SSRIs or SNRIs may be effective in reducing VMS (Nelson et al., 2006).

Non-hormonal therapies.

Non-hormonal therapies to relieve VMS include medications such as selective serotonin reuptake inhibitors (SSRI) and serotonin norepinephrine reuptake inhibitors (SNRI) which are antidepressants (Wong et al., 2009). The precise mechanism of action for these drugs in reducing VMS is not known, but one thought is that increasing serotonin levels will decrease leuteinizing hormone which will in turn reduce the severity of VMS (Wong et al, 2009). It is also postulated that estrogen may alter the activity of the noradrenergic and serotonergic system resulting in instability of serotonin and norepinephrine affecting the regulation of temperature homeostasis in the hypothalamus (Rapkin, 2007). The list for other non-hormonal medications is by no means complete but due to project word limit restrictions, it was elected only to discuss select antidepressants.

CHAPTER TWO

Literature Review

For a health care provider, the health care encounter with peri- and menopausal women is challenging. Incorporating a patient-centered approach into this encounter will enable to provider to create a trusting relationship, identifying the patient's individual

needs and goals, offer a discussion of factual information, and involve the patient in mutual decision-making for a management plan. A literature review was conducted to answer the question pertaining to whether or not NPs can improve the QOL for women experiencing VMS of menopause through the use of PCC. To answer this question three areas of inquiry were explored: 1) to discover whether PCC will improve the QOL of peri- and menopausal women, in terms of the information they can obtain and the type of encounter they may be expecting for the treatment of VMS; 2) to determine the strengths of NPs as primary care providers in implementing holistic PCC for women experiencing VMS; and 3) to identify the most current information regarding treatment of VMS, including lifestyle, HT, CAMs, and non-hormonal therapy.

Inclusion criteria

To help keep the search strategy focused on the purpose of the paper, the following inclusion criteria was used:

- Journal articles published between 1998 and 2010;
- Studies conducted in Canada, the US, the UK, Australia, or European countries; and
- Studies that address at least one of the following topics:
    - Menopause, menopausal symptoms, including vasomotor symptoms;
    - Quality of life for women experiencing VMS
        - what perimenopausal or menopausal women expect from their health care providers in regards to menopause;
        - are the needs of women changing in terms of their health care;
    - Patient-centered care

- Nurse practitioners; and
- Most current evidence-based information regarding HT and CAM, especially in regards to black cohosh and soy and non-hormonal therapy including selected SSRIs and SNRIs.

Exclusion criteria

The exclusion criteria also helped to narrow down the most current studies available:

- Studies before 1999; or
- Articles published as commentaries or editorials.

Search strategy

The databases of CINAHL, MEDLINE –Ebsco, Alt HealthWatch, PsycINFO, and Cochrane Reviews were searched for the purposes of this project. Websites on the internet were browsed for professional associations, guidelines and statistics. Saturation was felt to be reached when duplicates of articles were found in multiple databases, very few new articles were located and when reference lists were reviewed and some of the same articles were found. A manual search of the 2009-2010 submissions to *The Nurse Practitioners Journal* was undertaken where titles were reviewed to discover studies pertinent to the subject at hand.

Searching the data bases required using its own language or control vocabulary or thesaurus (Melnyk & Fineout-Overholt, 2005). Medline was searched using MeSH headings, which are the National Library of Medicine's thesaurus for MEDLINE's controlled vocabulary and allow a visual display of related terms (Melnyk & Fineout-Overholt, 2005). In the database Cinahl, CINAHL Headings were used; Alt HealthWatch required key words or subject and PsycINFO had its own thesaurus. Key words included:

- Menopause
- Perimenopause
- Hot flashes
- Patient-centered care
- Nurse practitioner
- Hormone therapy
- Complementary alternative medicine
- Non-hormonal therapy
- Quality of life

These key words were used as concepts in reference to the question. The key word was entered and subheadings related to the key word were found. Applicable subheadings were checked and the database was then searched. Then by combining database searches with *and* a more manageable number of articles pertaining to the question were found.

An example of the search strategy for patient-centered care produced varying results. In Psycinfo and Alt HealthWatch there were no results for the search term patient-centered care. No further search of these databases took place for PCC. Under Medline and Cinahl the following search terms were used 1) PCC; 2) NP; 3) menopause and 4) hot flashes.

Under Medline, the MeSH term menopause produced 20,800 results. The term menopause was broadened under a hierarchical thesaurus that returned specific headings of perimenopause, postmenopause or premenopause. These subject headings were included and over 39,000 results were obtained. This method was done on each term. Once the main search was completed, a process of combining the terms occurred. Under Medline combining PCC and NP, with a date limiter of the years 1999-2010, 76 articles

were found. This was a manageable search and the titles of the articles were read. If the title contained reference specifically to women, NP or PCC, the abstract was read. This search resulted in 4 articles that were of interest.

Cinahl uses CINAHL Headings as its vocabulary. A subject search of PCC resulted in over 6,900 results. None of the key terms were exploded because it was felt that once key terms were combined the results would be manageable. The Cinahl database resulted in seven articles of which one was the same as in the Medline search so total of 10 articles were obtained. Of these articles 6 were used in the paper. This in depth process was repeated for the other key terms indicated above. In addition, the internet was searched for clinical practice guidelines from Canada and the USA and those were reviewed with 2 guidelines selected.

Findings

The intended findings of this literature review are to discover whether the NP, when incorporating PCC for the management and treatment of women experiencing VMS, improves peri- and menopausal women's QOL. The need was revealed earlier in the paper which showed a potential for thousands of women in the province of BC seeking care for their bothersome VMS. Within that health care encounter, there are expectations that the patient will have of her provider as well as expectations that the provider will have of the patient. These findings will illustrate that PCC involves shared decision-making and reveals how women respond to PCC. Furthermore, the findings will demonstrate how PCC focuses on individualization of women resulting in mutually agreed upon treatment plans that will improve the QOL of women suffering from VMS.

Quality of Life

Health care is important to women. Today many women are challenging the dominant medical model (Morris & Symonds, 2004) and are no longer willing to blindly accept a prescription, fill it, and return for a refill (Guimond et al., 2003; Legare, Stacey, Dodin, O'Connor, Richer, et al., 2007). A study conducted in a Canadian province found that women between 41 and 66 years of age conveyed a strong desire to participate in their own health care decisions (Armitage et al., 2007), with 59.4% of women in another study reported sought health care for menopausal concerns (Williams, Kalilani, DiBenedetti, Zhou, Fehnel & Clark, 2007). From these numbers 46.2% of women seeking help came out of the 40 to 44 year age group which increased to 59.6% in the 45-50 year age group. Health-seeking for menopausal women in this study include a variety of complaints of which hot flashes (19.3%) and night sweat (15.0%) were the chief complaints (Williams et al., 2007). When this same group of women were asked their primary reason for seeking treatment, it was for hot flashes (21.9%). A survey of hospital inpatients found that 75% of the patients wanted more involvement in decision-making for minor illnesses compared to major illnesses, and patients between 45 and 60 years of age wanted more participation in decision-making compared to those who were under 30 years of age (Doherty & Doherty, 2005). For menopausal women, the desire for involvement stems from a need to have their perimenopausal and menopausal experience validated as a normal transition, and to decrease their anxiety regarding the symptoms they experience, thus improving QOL (Armitage et al., 2007). These numbers alert practitioners to the need for patient centeredness that involves shared decision-making to improve health outcomes.

In a qualitative study by Morris and Symonds (2004), it was found that the menopausal time is an added stress to an already full life which negatively affects women's QOL; 'I've now got a big fan in the office and I have it facing me…'(p.319). Similar sentiments were echoed throughout this rich informative study and women of this study found that their QOL suffered in their home lives as well as working lives. Women are therefore demanding more of their health care encounter and of their health care provider. They want to discuss their concerns, be involved in decision-making regarding these concerns and will then be able to collaborate perceptively on their management plans. It is through a process of PCC that a woman's QOL can be improved

Patient-centered care

A PCC approach takes into account the patient having a voice in shared decision-making, the practitioners' understanding of their patient's desire for information, practitioners' strong scientific and experiential knowledge and ultimately coming to a mutually decided plan. In literature, there are different terms that describe the characteristics of patient centeredness. Lauver, Worawong and Olsen (2008) use the term patient-centered interventions to describe care based on "…clinical status, beliefs, values, goals or preferences" (p. 145). Another term used in the literature is collaborative clinical decision-making that looks beyond the biophysical approach, to an approach where the clinician is aware of patients individual needs, cultural background and social role in decision-making (Trede & Higgs, 2003). Charlton, Dearing, Berry & Johnson (2008) describe a term biopsychosocial that includes actively engaging the patient in discussions and decision-making regarding their own care. A model of sustained partnership leads to optimal care outcomes for NPs in primary care that is characterized

by trust and mutuality (Dontje, Corser, Kreulen & Teitelman, 2004). Despite the title of the approach, two components emerge as forming the essence of PCC: 1) patient participation; and 2) individualization of care (Sidani, 2008). Patient participation in decision making, encouraged by the NP, increases NP understanding of the needs of the patients in context of the patient's own values and attitudes (Dontje et al., 2004) with the goal of improving health outcomes (Charlton et al., 2008).

By incorporating PCC, the NP can assist patients in health promotion and to formulate health goals to meet their needs. Patients in one study considered the visit to be patient-centered when there was discussion of the problem as well as discussion and agreement related to treatment options (Stewart, 2002). NPs may think that they are practicing in a holistic patient-centered manner, but a study conducted by Sidani (2008) found that patients perceived having participation in their care only to a moderate extent. This study was conducted on hospital inpatients and may not be generalizable to the menopausal population, but it alerts NPs to the possibility that their goals compared to patient goals may not be met. In another study, it was found that primary care patients who perceived their visit to be patient-centered received fewer diagnostic tests (Stewart, 2000). The proportion of patients receiving diagnostic tests rose from 4.1% to 25.4% in those who perceived that the doctor and their selves had not come to a common understanding. These studies provide insight into how health care professionals are perceived by the patient even when the NP or health care provider considers they are delivering patient-centered care.

Patient participation.

A component at the core of PCC is patient participation in decision-making. Decision-making is not a static process and it changes in response to information

received. By promoting shared decision-making health, outcomes will be met more consistently (Dontje et al., 2004). According to a study by Legare et al. (2007), it was found that women want to have an active role in decision-making during menopause. Many women also desire the ability to collaborate with their health care provider who can act as a trusted source of information. Women who took an active role in their primary care visits had a greater reduction in health concerns, improvement in their medical problems and an increase in perceived control. Being actively involved in the decision-making process was associated with increased adherence to prescribed medications (Salkovskis, Wroe, & Rees, 2004). Thus it appears that women rely on the NP for increasing their knowledge so an informed decision can be made.

PCC encourages participation in decision-making to improve patient satisfaction and to attain that satisfaction education of the patient must occur. The strength of PCC with its connection to education makes it a strong concept to be utilized by NPs in their care of menopausal women. Education of the patient was an important goal identified in different studies (Koeniger-Donohue, 2007; Lauver et al., 2008; Sidani, 2008). Education facilitates greater empowerment in patients to help them become effective promoters of their own health (Dontje et al., 2004). NPs that provide care in women's health appear to value the building of client relationships at the same time as providing a wide range of resources which fit the needs of the patient (Koeniger-Donohue, 2007). The value of building relationships was corroborated in a study by Lauver et al. (2008). Lauver et al. (2008) studied patients from primary care clinics and results revealed that the NP helped patients to attain their goals by providing health-related information. Improvements in health outcomes have been obtained by presenting patients with evidence-based information (Armitage et al., 2007). However, other types of information that may be

valuable to some women should not be ignored. Sveinsdottir and Olafsson (2006) found that women had more negative impressions about HT when they received information from friends and family. Armitage et al. (2007) however, found that second-hand information, or 'soft' information was readily accepted by the women they studied but the women did place their trust in the expert advice offered by health care professionals.

Most women have access to various types of information regarding VMS and treatment options; however, the diversity of such information can often give rise to confusion (Armitage et al., 2007). There is an immense amount of information available and women may find this to be less than satisfactory as the information is not always easy to interpret (Armitage et al., 2007). This conclusion was echoed by Legare et al. (2007) who found that the internet provides a vast amount of information, but many women struggle to validate the claims and accuracy of the information. Women felt that the information they found in posters and booklets was being thinly disguised as advertisements for HT or sales promotions (Morris & Symonds, 2004). The various sources of information seem to play a role in women's attitudes toward menopause and treatments. In most cases the sources of information are unsatisfactory, confusing and of unverified accuracy thus increasing the need for NPs to remain current with the latest research findings. Therefore, through the practitioner dissemination of evidence-based information to women, along with consideration of second hand information and also by listening to women's concerns regarding QOL, the provider can assist in the decision-making process in health care encounters. The ultimate goal of this approach is to improve health outcomes for women.

Assessment of the menopausal woman.

The other core component of PCC is individualizing the health care encounter based on patient characteristics, needs and preferences to improve health outcomes. The ability for clinicians to diagnose and determine the best treatment option for VMS relief is facilitated through a thorough individualized patient assessment. Individualizing the health care encounter has been mentioned consistently in the literature (Alexander & Moore, 2007; Dehn, 2007; Sarrel, Hess, Portman, Ravnikar & Simon 2006; Smith, 2005). A flowchart was developed by this writer by amalgamating the steps of a thorough assessment that had been recommended by different authors (Alexander & Moore, 2007; Dehn, 2007; Reid et al., 2009). The flowchart, which is presented in Appendix 1, provides a template for assessment of the menopausal woman and is intended for use by the NP during the health visit when a comprehensive health history is conducted with each patient. The comprehensive assessment will be less intense in subsequent visits. Symptom analysis of menopause may be effectively initiated by asking the female patient the question: *How is menopause affecting your life?* Assessment of personal risk factors such as stroke, cardiovascular disease, breast cancer, osteoporosis and VTE should be done along with a discussion of family history and risks (NAMS, 2010a). Gathering a full medication profile including over-the-counter medications is necessary (Dehn, 2007). A complete physical exam should focus on vital signs, potential cardiovascular, skeletal, genitourinary, and psychological risk factors and include a pelvic and rectal exam as well as a Pap test (Dehn, 2007). Health screening should include mammograms within the first 12 months of starting HT. Laboratory studies should include lipids, liver enzymes and blood glucose testing (Alexander & Moore, 2007; Dehn, 2007).

Following the history taking and physical exam, an open discussion between patient and health care provider has often led to individualized treatments for the relief of VMS (Alexander & Moore, 2006). Counseling should include discussion of risks and benefits of HT and alternatives with the choice of treatment based on risk factors and the woman's preferences. This is also a chance to uncover any misperceptions on the woman's part regarding menopause and treatment options. A menopause QOL assessment tool can help providers efficiently acquire information to form the basis for meaningful discussion (Smith, 2005). The menopause impact tool (MIT) was developed by Sarrel et al. (2006) to foster dialogue between the clinician and patient. This particular questionnaire was selected due to the rigor of development, but it is recognized that other questionnaires are in use; e.g. Utian Quality of Life Scale (NAMS, 2010b). Sarrel et al. (2006) felt that a questionnaire would raise patient awareness about menopause-related symptoms and their impact on four QOL parameters: 1) VMS; 2) sexual health; 3) psychological symptoms; and, 4) treatment assessment. They identified nine questionnaires that have been used in research to assess a woman's QOL during menopause. Many of the instruments were deemed inappropriate for use in the context of regular office visits. Seven of the scales were very long, some did not address menopausal symptoms, and others did not consider the impact on QOL. As no suitable questionnaire was found, a consensus team was formed to arrive at a questionnaire that would be suitable for the clinical setting. After considerable discussion about the wording of the questionnaire, the conclusion was to use a rating of the frequency of how bothersome symptoms are to women. At the time of the writing of the paper by Sarrel et al. (2006), clinical testing was being conducted to assess the validity of the tool with special attention given to ensure that the terms in the questionnaire would be easily

understood by patients. The timing and location of the use of the tool was also discussed (i.e., in the office, the waiting room, or at home) and the authors concluded that the developed questionnaire should be further evaluated in the clinical setting (Appendix 2).

Patient-centered care is an effective way to ensure that the provider understands that patient participation and individualization within the health visit improves health outcomes. For the purpose of this paper, the provider of PCC is the NP. The strength of the NP role is in the comprehensive psychosocial, biophysical, patient-centered and holistic approach that NPs utilize which is highly effective in enabling them to fully assess their patients.

Nurse Practitioner

NPs are proficient in assisting patients to pursue individual health care needs (Charlton et al., 2008). They tend to think beyond biomedical problem-solving and employ a more holistic view in providing care for individuals (Charlton et al., 2008; Trede & Higgs, 2003). This holistic perspective facilitates recognition of the multiple dimensions of the person and how each dimension impacts on the others (Tracey, 2009). Another aspect of holistic practice is "… where the emphasis is on prevention of illness and maintenance of health" (Cattell, 1999). The holistic perspective, which is common in all registered nursing practice, is integrated and expanded within advanced level competencies that is unique to NP practice (CRNBC, 2006). Holistic practice is facilitated through balance in the NP search for the best scientific information to satisfy their patients' needs and the search for discovering what the patient wants, all the components of PCC.

For NPs who practice PCC, being current on the most recent evidence-based research for adequate education of the patient and management of the patient's concerns

was found to be an important element of PCC. NPs in BC have advanced education to critically review research literature and identify misconceptions or half-truths in quantitative or qualitative research studies (Cattell, 1999). The use of evidence-based research provides NPs with up-to-date information from well-designed quantitative or qualitative studies. Research-based randomized clinical trials have long been the gold standard for obtaining evidence used in making clinical decisions (Melnyk & Fineout-Overholt, 2004). More recently, a paradigm shift has occurred so that comprehensive, evidence-based decision-making is used in addition to clinical experience and patient preferences. By combining both types of research, NPs can practice to an optimal level.

The education requirements in BC is a master's level which is a high attainment compared to NP education world wide. In a survey of 23 countries that employ NPs, it was found that 50% of those countries required a master's degree level of education (Pulcini, Jelic, Gul & Yen Loke, 2010). NPs must continuously review the literature to remain current in their knowledge, not only for menopausal treatments, but for every aspect of their patients' care (Furness, 2002). The World Health Organization (WHO) advocates for all health care professionals to have the professional responsibility to invest in continuing education (CE) in order to remain current and informed (WHO, 2010). CE is not unique to Canada, as the majority of countries who employ NPs have a requirement for CE for their ongoing licensure (Pulcini et al., 2010). Worldwide, 81% of respondents reported CE as a part of practice requirements (Pulcini et al., 2010). In BC, the nursing regulatory body, the CRNBC, has outlined continuing competencies that require NPs to complete a learning plan for their professional development. The requirements include options such as research, being a preceptor for NP students, and taking credit courses, particularly those that are unique to NP practice such as diagnosing and prescribing

(CRNBC, 2010c). The CRNBC has identified six professional activities for licensure and require completion of three out of six per year. The CE requirement for licensure is 15 contact hours of which one contact hour equals 50 minutes of education. With the continuing competencies that include educational hours, NPs are better able to meet the needs of their patients. In summary, the use of a holistic focus as well as the attainment of advanced education positions the NP as a strong health care provider. PCC is an optimal approach for use by NPs as it provides the individuality that is so necessary for the treatment options for women, especially those women experiencing VMS. A thorough assessment augmented by an assessment template and utilization of a menopause questionnaire can promote the disclosure of patient preferences. The next step is to provide a mutually agreed upon treatment plan.

Current Treatments

Therapies for VMS relief can be overwhelming. A full understanding of therapies is necessary as women place a great deal of trust in their provider for up-to-date evidence for treatment of their VMS.

Lifestyle factors.

Lifestyle was introduced in the background and the prevention of modifiable risk factors were stressed as a means of obtaining optimal health in women during their menopausal transition. It was unclear though whether lifestyle changes alleviated VMS and a Cochrane Review corroborated this finding (Daley, Stokes-Lampard, Mutrie & MacArthur, 2007). The authors indicated that there was no high quality randomized controlled study evidence to support exercise as a means of reducing VMS. However, lifestyle factors and their relationship to VMS were examined in the research titled Study

of Women's Health Across the Nation (SWAN) (Gold, Block, Crawford, Lachance, FitzGerald, Miracle et al., 2004). The results of this quantitative longitudinal multiethnic study demonstrated significance that the frequency of VMS were associated with passive smoke exposure and an increase in body mass index (BMI), but not for ethnicity and active smoking. Other research studies that were cited in the study by Gold et al. (2004) did not examine passive smoking. Other symptoms such as dietary factors including fat, fibre, caloric intake and alcohol consumption were reported but were not significant. These authors acknowledge that the associations found should be further researched in other longitudinal studies. Another limitation to the study conducted by Gold et al. (2004) was that VMS were not quantified in severity or frequency so assessing for changes with lifestyle interventions was difficult.

Thurston, Sowers, Chang, Sternfeld, Gold, Johnston et al. (2007) analyzed the associations between adiposity and VMS. Research findings revealed that a greater percentage of body fat was significantly associated with an increased reporting of VMS. Again, VMS were not discussed in frequency or severity, just that there was a positive correlation between adiposity and VMS. These authors suggest that further study is needed to determine whether or not weight loss has any impact on VMS. These examples are only a small representation of the analysis of the influence of lifestyle factors on VMS and are by no means complete. They do however demonstrate the complexity of menopause transition and the necessity for ongoing research in this area. The ability for intended lifestyle changes, while important to over all health, appears to do little in alleviating VMS in most women. Therefore medication should be discussed and offered to women based on its efficacy and consideration of a patient's individual risk/benefit assessment.

Hormone therapy.

The North American Menopause Society (NAMS) and SOGC develop clinical practice guidelines (CPG) and, according to these societies, hormone therapy is the most effective treatment for VMS and is indicated for use in the presence of moderate to severe VMS (NAMS, 2010a; Reid et al, 2009). CPGs are "statements that have been systematically developed to assist practitioners and patients in making decisions about care" (Melnyk & Fineout-Overholt, 2005, p. 209). CPGs can assist in bridging the gap between published scientific evidence and clinical decision-making (Melnyk & Fineout-Overholt, 2005). Current evidence indicates that HT is the best treatment for reducing hot flashes, compared to the effect of placebo, or any CAM or non-hormonal treatment currently available (NAMS, 2010; Reid et al., 2009). HT has been well studied and continued studies of its efficacy for the relief of VMS are unwarranted (MacLennan et al., 2004). HT reduces VMS in perimenopausal women by 65% and in menopausal women by 90% compared to a placebo (Alexander & Moore, 2007; Hickey, et al., 2007). Conventional HT consists of estrogen replacement with the addition of progestin for those who retain their uterus (Langer, 2009). The goal in prescribing HT is to determine the lowest dose that effectively alleviates bothersome perimenopausal and menopausal VMS (Langer, 2009).

A study by Mattsson, Skouby, Rees, Heikkinen, Kudela, Stadnicki-Kolendo et al. (2007) evaluated estradiol valerate (E2V) with medroxyprogesterone acetate (MPA) in preparations of 1:2.5 mg or 1:5 mg as low doses and 2:5mg as high dose. The actual dose is dependent upon the individualized response of the woman and susceptibility to side effects, such as breast tenderness or break-through bleeding. Oral low dose therapy showed a similar reduction in the number of hot flashes at the 12 week period of therapy

compared to higher doses. The reduction in number of flashes per week fell from greater than 30 to less than 5 in 12 weeks. At 40 weeks, the VMS were reduced by 69.9% in the 1:2.5 mg group, 63.1% in the 1:5mg group and 77.3% of women in the 2:5mg group and in fact these women were considered free of VMS. CEE and oral and transdermal 17B-estradiol were more effective than placebo in relieving VMS, however, studies do not support the efficacy of one type of estrogen over another. HT is effective for relief of VMS but also comes with adverse effects.

Another group of authors reported on QOL outcomes using the three doses described in the Mattsson et al. trial (Pitkin, Petrovna, Smetnik, Vadasz, Mustonen, Salminen et al., 2007). They studied effects of HT on climacteric symptoms such as mood, memory/concentration, anxiety/fears, sleep problems, somatic symptoms, menstrual symptoms, attractiveness and sexual behavior as well as VMS. They found that at baseline the women enrolled in this Finnish study that had experienced >30 VMS/week had lower QOL scores compared to age-matched women with no complaints. The results demonstrated a significant improvement in climacteric symptoms, in all treatment groups at week 52 ($P<0.0001$). This analysis of a recent randomized control trial demonstrates that HT relieves VMS resulting in an improved QOL.

HT is not without risks. The most commonly reported adverse effects of HT are atypical bleeding, breast tenderness, weight changes, venous thromboembolic effect and related cardiovascular problems (Nelson, 2004). Mattsson et al. (2007) compared three different strengths of estrogen and progesterone and there were 244 recorded adverse events related to drug therapy. Examples of adverse effects were bleeding/spotting, breast tenderness, uterine fibroids, or nausea. The number of events were statistically significant ($P=0.0002$) with more adverse events in the higher dose combined therapy group versus

the two other groups. Major adverse effects were rarely observed in 32 RCTs synthesised by Nelson (2004). Two reports of deep vein thrombosis were reported in women using CEE, and two cases of endometrial cancer with E2. All other adverse effects, for example breast tenderness, were felt to be nuisance in nature and not considered statistically significant. Major side effects of bleeding/spotting or breast tenderness that caused premature withdrawal in the study conducted by Mattsson et al. (2007), occurred in 23 of 458 women. The most serious side effect was uterine bleeding/spotting. There were five bleeding events, or 3.5% of the study population, but only one (0.7%) was considered to be drug related.

The SOGC and NAMS CPGs suggest that breast cancer is not increased with the use of HT for a limited time period, but it can be increased by approximately 2% per year after 5 years of use (NAMS, 2010a; Reid et al., 2009). The risk of breast cancer with appropriate HT treatment is put into perspective with a comparative risk that is similar to that of women who experience early menarche, late menopause, did not breastfeed, or had their first pregnancy after age 30. The SOGC guidelines also indicate that the risk for women with 1st degree relatives with breast cancer is slightly increased compared to the 12% risk seen in the general population (Reid et al., 2009). That risk rises to 24% when the 1st degree relative had breast cancer before the age of 50 years, and 48% with 2 relatives. As for those women who are breast cancer survivors, there is no definitive evidence as to whether or not HT will influence further breast cancer risk.

Another risk factor associated with HT use is VTE, which usually occurs within the first one to two years of use (NAMS, 2010a). VTE occurs more frequently in women who use combination estrogen progestin therapy. The risk of VTE increases in overweight women with a hazard ratio (HR) of 1.96%, obese women whose HR tripled to

3.09%, and among those with the Leiden factor V gene mutation in which a HR was not given (Reid et al., 2009). A hazard ratio is a measure of how often a particular event happens in one group compared to how often it happens in another group (National Cancer Institute Dictionary, n.d.). In a literature review conducted by Dee Park et al. (2003), it was found that women who were carriers of the Leiden factor V mutation and taking HT were between 14 to 16 times more likely to develop a VTE compared to women without the factor. In the WHI trial, the HR ratio was 4.0 in the first year of HT and fell to 1.04 by year six. The risk is doubled for women who are 50 years old and taking HT, however the greatest risk for VTE occurs among women older than 60 years and using HT (Reid et al., 2009). Health care providers must be aware of any contraindications to the therapy they choose. The contraindications to estrogen use are: 1) unexplained vaginal bleeding; 2) acute liver disease; and, 3) active thromboembolic disease. Contraindications of progesterone therapy are: 1) known or suspected carcinoma of the breast; 2) undiagnosed vaginal bleeding; and, 3) pregnancy (Rowe et al., 2006). It is important to counsel women on adverse events but equally important to be aware of the duration of treatment for optimal health.

Duration of HT treatment is crucial since it determines the length of time that a woman should receive VMS treatment, but uncertainty exists. The shortest time frame is not firmly established and for most women the duration of VMS is distinct and individual (NAMS, 2010a; Politi et al., 2008; Reid et al., 2009). According to Col et al. (2009), no studies conducted to date have lasted long enough to capture the true length of menopausal VMS. Their findings suggest that the mean duration of bothersome hot flashes was 5.5 years (range from 1 to 13 years). No significant differences in hot flash duration were found by comparing HT users to never-users. The authors suggested that to

be accurate, a longitudinal analysis of the duration of VMS should begin at the commencement of symptoms until they terminate (Col et al., 2009).

Knowing the optimal time when symptoms are at their worst is crucial. Studies have shown that VMS increase in the years before the final menstrual period, peak in the first year after the final menstrual period, and slowly wane over an approximate eight year period (Politi et al., 2008). This time frame has been corroborated in another study that showed the prevalence of hot flashes increasing as women approached menopause, from 13% in early perimenopause transition to 79% in the early menopausal stage (Lewis, 2009). Clinical implications of this time frame are significant, as a longer duration of symptoms may alter treatment decisions and clinical practice. The SOGC CPG suggests that HT should be not be used for more than five years to treat VMS, but longer courses of treatment may be considered for women who have prolonged VMS in discussion with their health care provider and on an individual basis (Reid et al., 2009). Since the duration of VMS vary among women, an individual woman's risk-benefit profile must be conducted if HT is to be used for more than five years. Women should be counseled that their risk of breast cancer may rise if they are taking a combination of estrogen and progestin (Col et al., 2009). This information impacts on the duration of therapy and understanding this will facilitate the patients' ability to make informed decisions regarding treatment (Col et al., 2009). Treatment options must be weighed carefully and consideration for discontinuation needs to occur, though questions remain regarding how to discontinue HT.

Despite the fact that studies suggest HT should be used for as short a time as possible, there is disagreement on when and how to discontinue HT (Pinkerton et al., 2009). For most women, VMS will subside and stop over time, but up to 25% of women

will be unwilling to stop HT due to persistent VMS (Pinkerton et al., 2009). A study aimed at examining the tapering down or abrupt discontinuation of HT was conducted by Lindh-Astrand, Bixo, Hirschberg, Sundstrom-Poromaa and Hammer (2010). To determine the impact of discontinuation, resumption of hot flashes was the primary study outcome with a QOL assessment as a secondary outcome. Results concluded that there were no statistical differences between the two study groups (P=0.85). Quality of life was assessed with a Psychological General Well-Being Index (PGWB) which included questions related to general health, anxiety, depression, vitality, self-control and well-being. The PGWB assessed QOL at baseline and at 6 weeks after discontinuation of HT with a score of 0 indicting the most negative option and 5 indicating the most positive option. Results found that those women who had resumed HT had a significantly more pronounced decrease in PGWB score in all categories compared to those who did not resume HT (P<0.001), with the most important single indicator being the severity of hot flashes. Thus, there is no agreement on how to discontinue HT and whether a "cold turkey" approach or a gradual reduction in dose over time is more appropriate (Hickey et al., 2005; Lindh-Astrand et al., 2010; NAMS, 2010a; Pinkerton et al., 2009). Not all characteristics of the population were measured such as body mass index or exercise and Lindh-Astrand et al. (2010) conclude that results may have been different if other specific population characteristics had been used. This is important information for NPs to have and to advise their patients of when considering tailored care for women discontinuing HT.

Complementary and alternative medicine.

Some women will be unwilling to initiate HT. Whether it is due to personal preference or uncertainties about adverse effects and benefits of HT, many women seek

alternatives for relief of VMS (Borrelli & Ernst, 2008; Geller et al., 2009; Jacobs et al., 2009; Lethaby et al., 2009). Whatever the reason, it is important for NPs to have appropriate knowledge about all treatment options available for VMS relief. Many CAMs have become popular since the results of the WHI trial were made available, including herbal supplements such as black cohosh and phyto-estrogens (Geller et al., 2009). Evidence indicates that up to 62% of women believe that "natural" plant-based hormones are at least as effective as HT in controlling VMS (Jacobs et al., 2009; Lethaby et al., 2009). Despite this large popularity, caution needs to be taken with consideration of using supplements.

Consumers and health care providers should exercise caution when using or recommending CAM and be aware of the actual strength and consistency of available products (Armitage et al., 2007; Reid et al., 2009). Difficulty in comparing the efficacy of supplements is due to multiple strengths and differences in the compounding of products (Borrelli & Ernst, 2008; Jacobs et al., 2009; Lethaby et al., 2007). Exact comparisons and conclusions about efficacy are problematic when the strength of a given product cannot be extrapolated to other products in the same class. Researchers have described difficulty in comparing results, for example in the comparison of black cohosh and phyto-estrogens, due to differences in herbal preparations (Borrelli & Ernst, 2008; Jacobs, et al., 2009; Lethaby et al., 2007). Becoming aware of the difficulty of comparing the different manufactured products makes the prescribing of herbal supplements challenging.

Black cohosh, an herbal supplement, was the seventh top-selling herbal supplement in the US in 2007 (Teschke, 2010). Studies have been inconclusive to its effectiveness in reducing the frequency or intensity of VMS among peri- and menopausal women. Borrelli and Ernst (2008) performed a systematic review and results of data

suggest that black cohosh can reduce the intensity but not the frequency of VMS; however, the evidence is insufficient to conclude that black cohosh can effectively control VMS. This finding was also reported by Geller et al. (2009) who found that black cohosh was no better than placebo and was actually less effective in reducing VMS (35% versus 63%). There were no statistically significant differences in the number or intensity of VMS between the black cohosh group and the placebo group except at the sixth and ninth month of intervention which at that time the black cohosh group showed greater symptom intensity compared to placebo. Many women continue using the supplement despite its poorly reported performance in reducing VMS. Geller et al. (2009) noted that black cohosh did not produce adverse effects and was safe in terms of breast tissue, endometrial thickness, liver enzymes, complete blood counts and lipid profiles; but, the authors could not comment on any adverse events when black cohosh was coupled with drug and or alcohol use. This is important information for health care practitioners when personalizing the care of women.

Another widely studied class of supplements are the phyto-estrogens with three main classes including isoflavones, lignans, and coumestans (Jacobs et al., 2009). The plant-based substance binds to estrogen receptors and exerts various estrogenic or anti-estrogen effects (Jacobs et al., 2009). The most extensively studied class of phyto-estrogens is isoflavone, which occurs largely from soybean. Wong et al. (2009) conducted a literature review of CAM used in menopause. They found that trials lasting longer than six weeks demonstrated statistically significant improvement in the reduction of VMS with one longer study of 24 weeks duration showing no overall difference. One can argue that the placebo effect, which is reported to be as strong as 58% in women,

could account for the improvement in VMS and is not necessarily attributable to the product being tested (Lethaby, et al., 2007).

The Herbal Alternatives for Menopause Trial (HALT) conducted in the US was a one year trial to study the effects of herbal supplements that are widely used for VMS (Newton, Reed, LaCroix, Grothaus, Ehrlich & Guiltinan, 2006). The primary outcome was a reduction of VMS from baseline and at different time intervals. Within the first three months a decrease in VMS frequency compared to placebo was observed, but for the following time intervals there were no statistically significant differences observed with one exception. At 12 months there was a worsening of VMS in a treatment group taking a multibotanicals plus soy product. Lethaby et al. (2007) conducted a systematic review and came across similar findings with the majority of studies reporting the effects of interventions with no significant differences between the soy and the placebo control group. While herbal supplements may be popular, there is insufficient evidence to support their effectiveness beyond a placebo effect.

Non-hormonal therapy.

A class of drugs that has been evaluated for treatment of VMS includes the SSRI and SNRI antidepressants. Citalopram is an SSRI that was trialed for effectiveness for controlling VMS when the drug venlafaxine, a SNRI, failed to achieve VMS control (Loprinzi, Flynn, Carpenter, Atherton, Barton, et al., 2005). This trial was not placebo controlled but rather a study on whether citalopram was more effective in reducing VMS than venlafaxine. Results found that citalopram reduced hot flashes by 53% therefore revealing positive results were found with this SSRI. In a placebo-controlled prospective trial, two SSRIs, citalopram and fluoxetine, were studied against a placebo (Suvanto-Luukkonen et al., 2005). The trial had a large attrition rate which may have skewed the

results. At the nine month mark between 32% and 40% of the population dropped out mainly due to the treatment's lack of effectiveness rather than adverse side effects. In the remaining participants, the results demonstrated a decrease in VMS by 50% in the fluoxetine group, 70% in the citalopram group and 60% in the placebo group. Adverse effects of these drugs were headache, arthralgia, depression, dry mouth, libido problem and blurred vision. These adverse effects, although not life threatening, resulted in 37% of the study patients dropping out before completion of the study.

A systematic review conducted by Nelson et al. (2006) revealed that with use of paroxetine, a SSRI, peri- and menopausal women experienced fewer hot flashes compared to placebo (3.3 vs 1.8 fewer, P=0.01). Other studies within this review found no significant differences in the frequency of VMS when using the SSRIs fluoxetine or citalopram. Studies that reviewed venlafaxine found that it significantly reduced hot flash frequency compared to placebo (30%-58% vs 19%, P<0.001), but this study was in a special group of women with breast cancer. A smaller study of this review found that there were no significant reductions in frequency of hot flashes. In this systematic review the most common adverse effects reported were headache, nausea, drowsiness, a decrease in appetite or dry mouth. Overall, the authors feel that the randomized placebo-controlled trials examined in their review do support the efficacy of SSRIs and SNRIs in reducing hot flashes. Women could be counseled on the positive effects SSRIs and SNRI in treating their VMS.

Limitations of review

This paper provided an overview of current information regarding HT along with its safety and efficacy. One limitation was not making specific recommendations for treatment based on specific doses, routes and types of medications on the market for

VMS, whether they are HT, CAMs or non-hormonal therapy. Word limits and the specific focus of the paper limited complete discussion of all therapies available to treat VMS. Another limitation is the brevity with which lifestyle factors and the influence to VMS were discussed; however, this could be a paper unto itself. Also the literature search did not reveal any studies that focused on PCC and the menopausal woman. By taking these characteristics of PCC and applying these to the medical encounter it was shown that NPs using PCC can effectively assist women to manage their VMS.

CHAPTER 3

Discussion, Implications, Recommendations and Conclusions

Discussion

Mild, moderate and severe VMS occurring during the menopause transition can be bothersome for many women causing them to seek advice and treatment from their health care provider. VMS are not a disease in need of a cure; they are an aspect of a physiological transition that can be tolerated with education and management. Bothersome VMS are one of the leading reasons peri- and menopausal women seek medical care, and it was determined that thousands of women in BC seek help for VMS at any given time. The topic of VMS was explored in order to gain insight into the current existing evidence that is available to assist practitioners in providing appropriate management for women. The overreaching purpose of this paper was to answer the question, "Can NPs utilize PCC to help improve the QOL of women experiencing VMS?" and the answer to this question is yes.

PCC is a general approach to personalize care to meet individual needs (Sidani, 2008). PCC has an ultimate goal to increase patient satisfaction and to improve patients'

QOL. For the purposes of research projects, distinctions on the severity of VMS are dependent on the frequency and/or severity of the hot flashes. Those variables may be good data-collection points for research but do not necessarily fit a pattern that is reflective of women's real life experience. In real life, even one hot flash, in the midst of an important business meeting or other social event can be disturbing. Especially if you picture that woman standing in front of a group of people and suddenly her face is flushed and perspiration is forming on her upper lip. The woman quickly and inconspicuously, or so she thinks, sheds her outer garments only to put them back on in a few minutes when she now begins to feel chilled. This scenario illustrates that QOL can be impacted negatively with the onset of VMS. In the descriptive qualitative studies included in this paper women do not talk in frequency or severity they just talk about inconvenience and embarrassment. Therefore a NP's proficient assessment and commendable patient-centered skills can culminate in a collaborative management plan that will evoke satisfaction for the patient with the ultimate of goal of a resumption of a QOL that the woman who once suffered by bothersome VMS once again enjoys.

PCC has two definitive goals that include patient participation and individualization. Women want to be heard and many want to be involved in the decision-making process when it comes to their own health care. Studies conducted on decision-making revealed that may women want a commanding role in the decision-making process when it comes to menopause care. The results of these studies act as a reminder to NPs that women want to be actively involved in the health care encounter, which will assist in alleviation of fears and anxiety surrounding the menopause transition, but do NPs always incorporate PCC? Research showed that patients felt that it is not always being done. That being said, the population of people in the studies may not be

generalizable to a population of primary care menopausal patients; however, these studies do highlight to practitioners that PCC is not always being used. Studies have also shown that not all patients want to be that involved in their health care decisions and so all will not participate in shared decision-making which leave management plans up to the practitioner. Based on current literature, this author has concluded that practitioners need to assist patients individually in managing their health as collaboratively as the patient wants.

Another goal of PCC is individualization. Research has shown that women do not want standardized care where one-size-fits-all. The shift to individualization ensures that each woman's unique wants and needs are being met and the crucial exploration of the risks and benefits of the woman's preferred therapies can occur. NPs have prescriptive authority where they base their decision for medication use following a careful history, assessment and a thorough discussion of what the woman wants. Utilizing patient centeredness by listening to the woman and supporting her choices is vital to ensuring adherence to treatment plans.

Once the information gathering has taken place, the advanced knowledge that practitioners possess enables them to aid the patient in developing a plan. A key component to PCC is knowledge. Women want to engage in intelligent conversations surrounding HT, CAMs and alternative therapies for VMS management. It was shown that it is difficult for women to decipher fact from advertisement and they rely heavily on their health care provider. For the provider, it can be equally difficult to remain current with the vast amount of research that is available. NPs, whose graduate education includes analysis of research, are in an optimal position to help make sense of all the information that is available to women.

Strength of NPs as care providers lies in their ability to interact with their patients. The NP's unique holistic approach facilitates communication of not only best-evidence but devotes great importance to exploring a woman's goals regarding her health. NPs complete a health history and thorough assessment of each woman while creating a therapeutic relationship that explores women's wants and needs. A flowchart can aid in the organization of the health care encounter and ensure that steps are not missed (see Appendix A). A tool, such as a questionnaire, can be used as an introduction to the topic of menopause and may be a valued addition to the health assessment (see Appendix 2). This type of self report is a way to collect information. The NP can then work with that information and arrive at a decision based on his or her knowledge of pharmacology and prescribing practices so a mutual yet safe management decision is attained. Thus a questionnaire can provide a foundation for a more therapeutic, satisfying relationship between provider and patient. When integrated NP competencies, enhanced clinical skills and measurement tools are considered in the context of this paper, it becomes evident that NPs are educated to integrate patient-centeredness into their practice and are highly effective practitioners and consultants for supporting women with VMS complaints.

NPs have been introduced into BC's medical community to improve access to health care. By utilizing PCC as a general approach to personalize care to meet the needs of the individual; NPs are in a position to provide competent health care. It is not one certain element or competency that make NPs an optimal choice as primary health care provider, but rather a combination of competencies fundamental to the NP role that are integrated into practice. By integrating the competencies of clinical practice, research, leadership, health assessment, diagnosis and therapeutic management, the NP educates

and advocates for individuals in relation to decisions that may affect their health and ultimately their QOL.

This paper contained extensive information relating to the different therapies for the treatment of bothersome VMS. Studies have been conducted to examine the type and dose of estrogen or combined estrogen/progestin that is required for efficacy. HT has been shown to be the most effective treatment for women experiencing bothersome VMS. Part of the art of prescribing is choosing an appropriate regime for individual women. Current recommendations for women who are considering HT are that the lowest effective dose of estrogen should be prescribed, with the addition of progestin for those with an intact uterus, to obtain VMS relief. HT should be given for duration of less than five years to reduce the potential for serious adverse effects. This makes it imperative that NPs and health care providers recognize that VMS occur most frequently in the year before menopause and the year or two following a woman's last menstrual cycle. This allows women and their practitioners to decide when to start HT for maximum efficacy while realizing that the duration of menopause is individual for women with some experiencing VMS well into their 60s. CPGs can be used by the NP to provide the most current information regarding HT as well CAMs or non-hormonal therapy (Reid et al., 2009). A limitation for guideline use is that they are just guides that integrate evidence for practice but may not fit all situations or be generalizable to individual women.

NPs will encounter women who will make the decision not to use HT. This review has found that HT is often the only treatment option provided to women by many health care providers, and alternatives to HT are not always discussed. NPs value shared decision-making with their patients and the use of PCC individualized attention and consideration of diverse therapies will prevent a narrow approach to VMS management.

CAMs are growing in popularity as alternatives to HT and women are being inundated with less than reliable sources of information obtained from the internet or print material leaving them with unanswered questions. NPs will be expected to answer these women's questions with the same judiciousness as when answering questions about HT. Effective information exchange and trust between the patient and provider can aid in selecting optimal treatment options (Lewis, 2009). As for adverse effects, it was shown that all the different hormonal and non-hormonal oral treatments come with their own list of adverse effects. Experience of these effects may create discussion in subsequent medical appointments and a patient-centered approach will help produce satisfaction with the health care encounter.

Implications for Practice

The purpose of this paper has been to discover whether the use of PCC in the health care encounter improves QOL for women experiencing VMS. From this information implications and recommendations for NP practice have become apparent. The competencies that define the NP role include all the components of PCC: 1) holistic practice that focuses on the person and encourages patient involvement; 2) advanced assessment skills that reveal the uniqueness of each person; and, 3) a strong scientific and experiential knowledge base from which to present information and develop safe and effective treatment options and management plans. What is known is that NPs practice to a high standard. Studies of women's experiences of the health care encounter NPs reveals that PCC can improve their QOL by incorporating it into each health visit. To address women's needs more completely, a comprehensive approach must be conducted.

- NPs caring for women with VMS should incorporate a patient-centered approach at each visit. A full initial health history, discussion of women's goals,

risk/benefit assessment and development of a collaborative management plan will improve health outcomes and QOL. A history update is all that is required in subsequent visits.

- The PCC approach is useful for new and experienced NPs as they strive for better understanding of the complexities of their individual patients.
- NPs caring for women with VMS should incorporate qualitative assessment tools such as the MIT to improve supportive individualized care and assist the woman in understanding vasomotor symptoms.

Recommendations

The research has provided vital information that explains VMS and treatment options. It is recommended that NPs apply the clinical research found in this paper along with the use of CPGs in the management of women experiencing VMS. The CPGs will guide the NP in providing the most appropriate treatment. It is also recommended that continuing education will assist the family NP in providing evidence-based information to women experiencing VMS of menopause.

Future research.

Nurse practitioners have advanced formal as well as experiential education that places them in an advantageous position to determine where future clinical research topics exist. By utilizing reflective practice NPs may come up with more significant topics on women's health for future research.

- As a NP, I would like to conduct research on whether or not the effects of PCC have a positive impact on the QOL of women experiencing VMS. The components of PCC would need to be clearly defined as well as standardizing

measures of QOL indicators. It is hypothesized that the results would show an improvement of women's QOL.

- As a NP, I would like to further the development of an assessment tool, applying evidence-based research to its development and validating it in clinical practice.
- Specialty training can lead to the development of NP-led practice groups in primary health care focusing on women's health. Further research into whether PCC can be applied to group visits for women in menopause is warranted.

Conclusion

Nurse practitioners are a valuable addition to the primary health care team in British Columbia. This paper has discussed just one small part of the care of women, but it has highlighted the strength of the NPs as skilled practitioners who, along with the use of PCC, can be the best providers for the care of women experiencing VMS.

Patient-centered care is an approach that allows woman who experience VMS to have a voice, share in decision-making and collaboratively agree to a treatment plan. The PCC approach addresses women's concerns regarding VMS that are impacting on QOL. The experience of VMS is unique and individual for each woman, so it is imperative for the NP to listen to what individual women say. This listening needs to encompass not only to how VMS are impacting on life, but also needs to include how each woman wants to proceed in regard to treatment. The NP is skilled in presenting treatment options such as lifestyle changes, HT, CAMs or non-hormonal therapy to women experiencing VMS. Employing lifestyle changes such as weight control and smoking cessation will help improve overall health. Specific to VMS, NPs will counsel the woman on the various treatment options available to them.

NPs provide care that is holistic and patient-centered. Their advanced knowledge, training and skills enables NPs to effectively assist women in the management of VMS of menopause by enhancing health care and improving women's quality of life.

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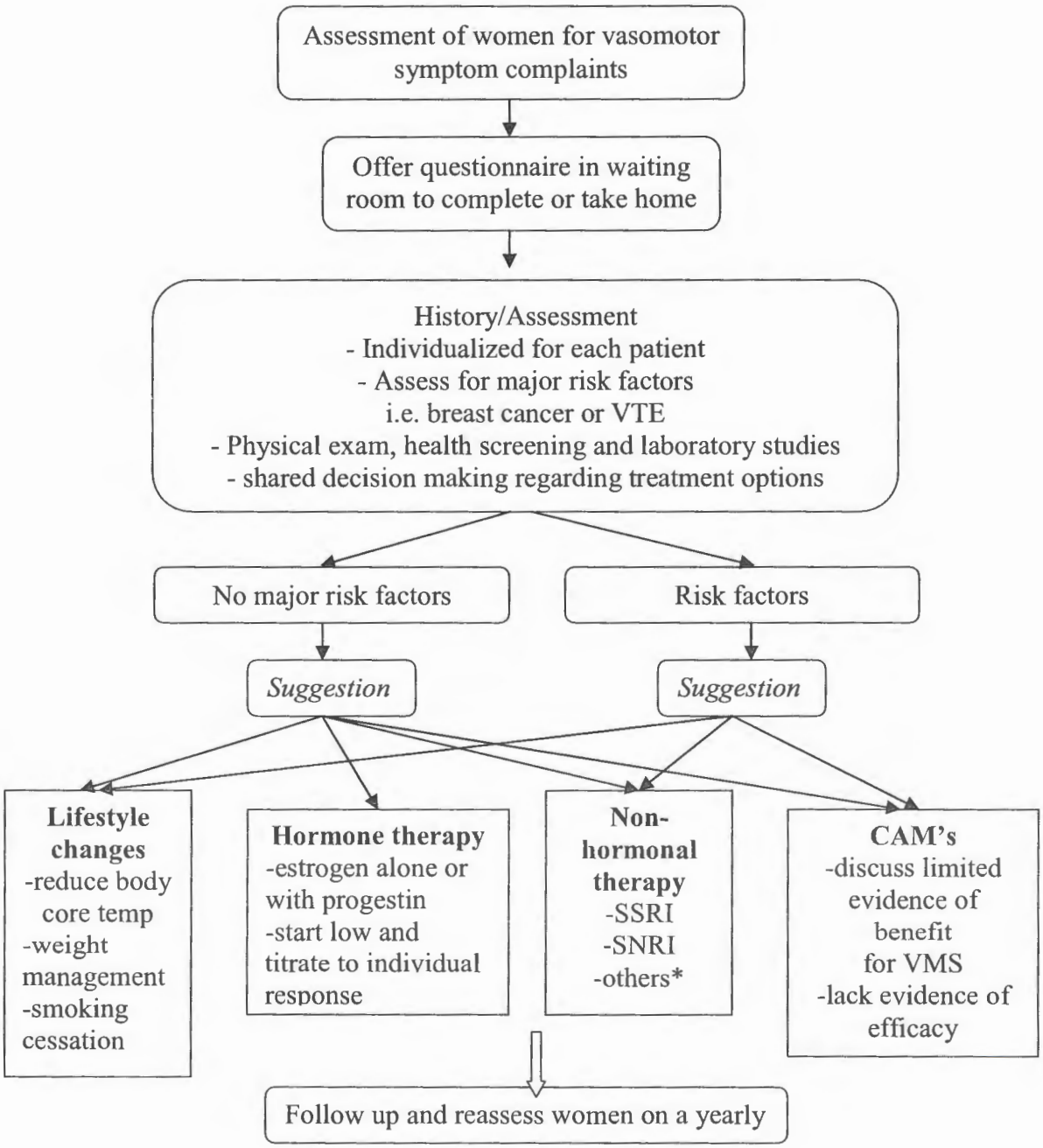
Appendix 1



* See SOGC guidelines for other non-hormonal therapies

References

Alexander & Moore (2007)
Dehn (2007)
Reid et al., (2009)

Appendix 2

Menopause Impact Tool

Patient Name: _____ Date of Birth: _____ / _____ / _____

THIS SECTION TO BE COMPLETED BY HEALTHCARE PROFESSIONAL

Date: _____ Patient Time In _____ Patient Time Out _____

Past Hysterectomy (Yes/No) _____ Menopausal (Yes/No) _____

Patient Instructions: Please answer the questions below prior to meeting with your healthcare professional who will review the completed questionnaire during your office visit.

Rating Scale: **1 – Not at all or rarely** **2 – A little or moderately** **3– Regularly or frequently**

Assessment of Vasomotor Symptoms

In the last month, to what extent have you been bothered by the following symptoms? Please rate each symptom from 1 to 3 *(refer to above scale and circle your response)*. Then, place an "X" in ONE of the boxes to indicate which ONE symptom is most bothersome to you, or most disrupts your daily life.

Hot flashes	1	2	3	☐
Night sweats or chills	1	2	3	☐
Sleep disturbance	1	2	3	☐
Joint pain or stiffness	1	2	3	☐
Fatigue	1	2	3	☐

To what extent have these symptoms negatively impacted the following (refer to above scale and circle your response)?

Feelings about yourself	1	2	3
Relationships	1	2	3
Work	1	2	3

_____ **Total Vasomotor Symptoms Assessment Score**

Assessment of Sexual Health

In the last month, to what extent have you been bothered by the following symptoms? Please rate each symptom from 1 to 3 *(refer to above scale and circle your response)*. Then, place an "X" in ONE of the boxes to indicate which ONE symptom is most bothersome to you, or most disrupts your daily life.

Genital Dryness, pain and/or burning	1	2	3	☐
Pain during sexual activity	1	2	3	☐
Decreased sexual desire	1	2	3	☐
Decreased sexual response	1	2	3	☐
Decreased sexual frequency	1	2	3	☐

To what extent have these symptoms negatively impacted the following (refer to above scale and circle your response)?

Feelings about yourself	1	2	3
Relationships	1	2	3
Work	1	2	3

_____ Total Sexual Health Assessment Score

Menopause Impact Tool

Assessment of Psychological Symptoms

In the last month, to what extent have you been bothered by the following symptoms? Please rate each symptom from 1 to 3 *(refer to above scale and circle your response)*. Then, place an "X" in ONE of the boxes to indicate which ONE symptom is most bothersome to you, or most disrupts your daily life.

Anxiety	1	2	3	☐
Irritability	1	2	3	☐
Sadness	1	2	3	☐
Difficulty concentrating	1	2	3	☐

To what extent have these symptoms negatively impacted the following (refer to above scale and circle your response)?

Feelings about yourself	1	2	3
Relationships	1	2	3
Work	1	2	3

_____ Total Psychological Symptoms Assessment Score

_____ **Total Score for Menopause Symptoms and Impact Assessment (*Please add Total Assessment Scores from the above for Final Total*).**

Treatment Assessment

Please choose the statement that applies to you (*Check the most appropriate response*).

_____ "I'd like to try hormone therapy for the treatment of my menopausal symptoms."
_____ "I'd consider taking hormone therapy for the treatment of my menopausal symptoms, but I would first like to learn more."
_____ "I've taken hormone therapy in the past for the treatment of my menopausal symptoms, but I didn't like it."
_____ "I'll never take hormone therapy for the treatment of my menopausal symptoms."

ASSESSMENT SECTION TO BE COMPLETED BY YOUR HEALTHCARE PROFESSIONAL. THE INFORMATION ABOVE, INCLUDING THE TOTAL SCORE, WILL BE ANALYZED BY YOUR HEALTHCARE PROFESSIONAL.

NOTE TO HEALTHCARE PROFESSIONAL:

Important: In addition to the above, the patient's family and medical history should be reviewed and assessed in order to determine if the patient is a candidate for hormone therapy. Some [illegible] to identify [illegible] hysterectomy, [illegible] stroke, [illegible] (VTE), coronary artery disease (CAD) or hypertension, dementia, colon cancer.

Suggestion: It is suggested that the [illegible] questionnaire be completed again [illegible] to determine treatment adherence and effectiveness.

Menopause Impact Tool. Retrieved from http://www.femalepatient.com/pdf/MenopauseImpactTool.pdf